

Amendments to the Specification:

On page 1, prior to the first paragraph which begins on line 2, please insert the following:

TECHNICAL FIELD

Please replace the paragraph which begins on page 1, line 2 and ends on line 12, with the following rewritten paragraph:

The present invention relates to a relative-pressure sensor, or a pressure-difference sensor, especially those using hydraulic pressure transfer.

BACKGROUND OF THE INVENTION

Such pressure sensors with hydraulic pressure transfer involve, as a rule, a measuring apparatus having two half-chambers, which are, in each case, sealed by a separating membrane, or diaphragm, and filled with a transfer medium. The separating membranes are loaded, respectively, with a pressure to be measured and with a reference pressure, and these pressures are then transferred via the separating membranes into the respective half-chambers. The half-chambers are separated from one another by a sensor element, which has a pressure sensitive element, especially a measuring membrane, which is loaded on its first surface with the hydraulic pressure in the first half-cell and on its second surface with the hydraulic pressure in the second half-cell.

Please replace the paragraph which begins on page 1, line 20 and which ends on line 30, with the following rewritten paragraph:

Due to boundary-conditions of the design and due to manufacturing tolerances, it is very difficult, or practically impossible, to construct a measuring mechanism having perfectly symmetrical half-chambers. That is, small deviations remain between the volumes of the half-chambers, and the stiffnesses of the two separating membranes are not absolutely identical. This has the consequence that, for example, in the case

of a warming of the transfer liquid in the two half-chambers, the measuring element is loaded from its two, pressure sensitive sides, with a different hydrostatic pressure, although, for example, externally, identical pressures are acting on the two separating membranes. This leads to a temperature-dependent shifting of the zero point of the measurement signal.

SUMMARY OF THE INVENTION

An object of the present invention is, therefore, to provide a pressure-difference sensor overcoming the described disadvantages.

Please replace the paragraph which begins on page 1, line 31 and ends on page 2, line 1, with the following rewritten paragraph:

This object is achieved by the a pressure-difference sensor ~~as defined in claim 1.~~ Further advantages and features of the invention follow from the dependent claims, the description and the drawings. ~~A pressure-difference sensor of the invention~~ which includes a measuring apparatus having a first half-chamber with a first volume V_1 , which is sealed by a first separating membrane having a first membrane stiffness E_1 and a second half-chamber with a second volume V_2 , which is sealed by a second separating membrane having a second membrane stiffness E_2 , with the first half-chamber being separated from the second half-chamber by a pressure sensitive element, especially a measuring membrane, and the first half-chamber being filled with a first transfer liquid having a first coefficient of thermal expansion α_1 and the second half-chamber being filled with a second transfer liquid having a second coefficient of thermal expansion α_2 , with a first product of the first membrane stiffness, the first volume and the first coefficient of thermal expansion being essentially equal to a second product of the second membrane stiffness, the second volume and the second coefficient of thermal expansion ($E_1 * V_1 * \alpha_1 = E_2 * V_2 * \alpha_2$), and with, additionally, at least one factor of the first product deviating, by design, from the corresponding factor of the second product.

Please replace the paragraph which begins on page 2, line 2 and ends on line 14, with the following rewritten paragraph:

~~A pressure-difference sensor of the invention~~ which includes a measuring apparatus having a first half-chamber with a first volume V_1 , which is sealed by a first separating membrane having a first membrane stiffness E_1 and a second half-chamber with a second volume V_2 , which is sealed by a second separating membrane having a second membrane stiffness E_2 , with the first half-chamber being separated from the second half-chamber by a pressure sensitive element, especially a measuring membrane, and the first half-chamber being filled with a first transfer liquid having a first coefficient of thermal expansion α_1 and the second half-chamber being filled with a second transfer liquid having a second coefficient of thermal expansion α_2 , with a first product of the first membrane stiffness, the first volume and the first coefficient of thermal expansion being essentially equal to a second product of the second membrane stiffness, the second volume and the second coefficient of thermal expansion ($E_1 * V_1 * \alpha_1 = E_2 * V_2 * \alpha_2$), and with, additionally, at least one factor of the first product deviating, by design, from the corresponding factor of the second product.

On page 4, prior to the second paragraph which begins on line1, please insert the following:

BRIEF DESCRIPTION OF THE DRAWINGS

On page 4, prior to the paragraph which begins on line 10, please insert the following:

DESCRIPTION OF THE PREFERRED EMBODIMENTS